

National Commission for Sustainable Development of the Republic of Belarus

**National Progress Report on Sustainable Development of the Republic of
Belarus**

**Minsk
2002**

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Introduction

The tenth anniversary of the UN Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992, bringing together 179 countries, will be marked in June 2002. A program "Agenda 21" that was adopted at the Conference sought to promote international cooperation and attain the following interrelated goals: public well-being, high-quality environment and well-balanced economic development. The Rio Conference attracted the attention of the international community to the issues of sustainable development and strove to raise popular awareness of their importance.

However, the last ten years have convincingly demonstrated that national governments, international organizations, business community and civil society have not done enough to implement the UNCED objectives. Although Belarus was the first among the CIS countries to develop a National Sustainable Development Strategy (further referred to as NSDS), the Belarusian government has so far been unable to fully meet the UNCED projections.

However, guided by the principles of Agenda 21, Belarus has been striving to promote sustainable development that is "development seeking to meet the need of the present generation without compromising the ability of future generations to meet their own needs. It aims at assuring the on-going productivity of exploitable natural resources and conserving all species of fauna and flora."

1. The most critical aspects of globalization and sustainable development in the context of Belarus

The model of socially oriented economy adopted by Belarus guarantees human rights and liberties, equality of all forms of ownership, as well as links the employee's remuneration with their performance. This model also ensures social security for the disabled and other vulnerable strata of the society.

The following legal acts outline strategic goals, tasks, and basic development principles and priorities of Belarus in the first decade of the 21st century: the National Sustainable Development Strategy of the Republic of Belarus adopted in March 1997, the Principal Guidelines for Social and Economic Development for up to the Year 2010 passed in August, 2000 and the 2001-2005 Program for Social and Economic Development of the Republic of Belarus approved in August, 2001.

Incorporating the provisions of the Rio Declaration on Environment and Development, the National Sustainable Development Strategy of the Republic of Belarus determines problem areas, long-term objectives and priorities in the domain of social and economic development, management of natural resources, and environmental protection. It also contains scientifically grounded recommendations that government agencies and NGOs should take into account when devising and executing social and economic development programs as well as preparing forecasts of social and economic development.

In compliance with the tasks and objectives of Agenda 21, the NSDS sets the following objectives:

- Stabilization of the social and economic situation and improvement of the living standards as preconditions for sustainable development;

- Creation of the macroeconomic conditions that will facilitate Belarus transition to sustainable development;
- Establishment of economic conditions to address a wide range of social and environmental problems, including healthcare, poverty eradication, crime prevention and alteration of consumption and production patterns;
- Improvement of the demographic dynamics;
- Preservation and further development of scientific and technical potential with particular emphasis on the solution of environmental problems;
- Efficient management of natural resources;
- Boosting of investment inflows;
- Development of social and political mechanisms of sustainable development;
- Inclusion of region-specific factors and population distribution issues in the National Sustainable Development Strategy;
- Improved coordination of efforts undertaken by the state and civil society to promote social and economic development;
- Responsibility for the conservation of natural resources for future generations.

The National Sustainable Development Strategy seeks to take into account current trends, including globalization of social and economic processes, transition to a post-industrial society based on new technological patterns, and capacity-building for comprehensive human development.

If Belarus is to successfully implement the principles of sustainable development, it should capitalize on the benefits of globalization, while preserving its cultural and historic heritage.

Successful integration into the international division of labor requires scientific and industrial potential, highly educated population, adequate national scientific and technological community, and access to external sources of information, capital and raw materials. Although all of the above conditions are already in place, Belarus has to develop them further to safeguard its national interests in the global competition and use its competitive advantages to strengthen its position in the world economy.

Integration of Belarus into the global economy is the fundamental precondition for the successful transformation of its economy and further social progress.

Belarus bases its NSDS on the premise that each country has its specific features, needs and ways of development. Belarus geographical location and its close economic ties with the countries of the former Soviet Union have shaped its foreign policy priorities, preferences and principles for joining regional and global structures. The primary focus of Belarus foreign policy is the development of trade relations with the CIS countries, primarily with the Russian Federation. The establishment of the Union State with the Russian Federation should be considered not as an alternative but rather an inseparable part of global integration. The NSDS views integration into the global economy as a key tool for fostering economic growth and raising public well-being.

2. Elaboration and implementation of the National Sustainable Development Strategy

To respond to sustainable development issues effectively, the National Commission on Sustainable Development of the Republic of Belarus was established in 1996. The

Commission tasked specialists of state agencies and scientific institutions with a Concept of the National Sustainable Development Strategy of the Republic of Belarus. The concept was approved by the National Commission on Sustainable Development of the Republic of Belarus and the Presidium of the Council of Ministers of the Republic of Belarus in 1997. The Resolution of the Council of Ministers of the Republic of Belarus of 27.03.97 #255 states that "NSDS should be used as a framework document for the elaboration of all forecasts and programs for social and economic development of regions and sectors of economy."

The Law of the Republic of Belarus "On State Forecasting and Social and Economic Development Programs" adopted in 1998 stipulates that (a) the NSDS shall be developed every five years for the period of 15 years and (b) the Guidelines for Social and Economic Development for the period of 10 years must be prepared every five years in compliance with the Strategy.

In accordance with the Law "On State Forecasting and Social and Economic Development Programs," the Guidelines for Social and Economic Development for the period of 10 years include a section "The State of the Environment and Measures for its Improvement." The Program of the Social and Economic Development of the Republic of Belarus for the period of five years contains sections entitled "Natural Resources" and "Effective Management of Natural Resources and Protection of the Environment". In addition, the annual social and economic development forecasts include a section called "Environmental Protection and Management of Natural Resources."

The Resolution of the Council of Ministers of the Republic of Belarus #264 of February 27, 2002 approved the new composition of the National Commission on Sustainable Development of the Republic of Belarus. V.N. Drazhin, Deputy Prime Minister of the Republic of Belarus, was appointed Commission Chairman.

3. International cooperation and harmonization of the Belarusian environmental protection legislation with international law

Belarus relies on international contacts, primarily cooperation with the Russian Federation, the CIS and the neighboring Central and Eastern European countries as well as international organizations, in attaining the sustainable development objectives.

In April 1997 the Government of the Republic of Belarus conducted an International Conference on Sustainable Development in Countries with Transition Economies in Minsk in cooperation with the UN Development Program, UN European Economic Commission, UN Department for the Development Support and Managerial Services, and US Environment Program. The conference contributed to the execution of Agenda 21 and fostered international cooperation in the fields of economic reforms, integration of the European and world economy, and transition to sustainable development.

Belarus initiated the elaboration of a concept of sustainable development of human settlements and territories of the CIS. To address the issues of sustainable development of settlements, Belarus conducted an International Conference on the Development of a Communication System "Paris-Berlin-Warsaw-Minsk-Moscow" (Minsk, 1997) and a Conference on Sustainable Development of Human Settlements and Territories (Minsk, 1998). Fulfilling its obligations under the Second UN Conference on Human Settlements (Habitat II), the Republic of Belarus carried out a comprehensive survey on the Habitat II

progress in Belarus In addition, a National Report "On Problems and Tendencies in the Development of Human Settlements in the Republic of Belarus" was published.

Over the last five years, Belarusian state agencies and local governments have been establishing contacts with their counterparts in Poland, Ukraine, Lithuania, and Latvia.

In accordance with the resolution of the Bilateral Belarusian-Lithuanian Commission on Trade and Economic Cooperation, a Concept of Trans-Border Spatial Development of Belarus and Lithuania is presently being drafted. Belarus and Poland are currently developing "A Forecast of Spatial Development of Border Regions of Belarus and Poland up to the Year 2015", as well as other projects of mutual interest.

A Project entitled "Regional Development and Environmental Protection in the Neman Region" has been completed with assistance from TACIS. The Project covered Alitus, Mariampol and Vilnius Regions of Lithuania, Podlaska Province of Poland, and Grodno Region of Belarus.

Belarus is also involved in a variety of projects that are being implemented in the Baltic region within the framework of the VASAB 2010 and INTERREG 3B Programs. These projects address a wide range of issues including efficient spatial planning, management and conservation of natural and cultural heritage.

As indicated in the National Sustainable Development Strategy, the primary goal of the ecological policy of the Republic of Belarus is the development of legislative and economic framework for environmental protection and efficient management of natural resources to ensure ecological security for its population.

The Constitution of the Republic of Belarus declares the right to safe environment as one of the integral individual rights (P.1, Article 46). The following legal acts regulate environment-related issues in Belarus: the Laws of the Republic of Belarus "On Environmental Protection" (1992), a new version of which is being considered by Parliament, "On State Environmental Inspection," "On Waste Management" (November 26, 2000), "On Sanitary and Epidemiological Security of the Population" (May 23, 2000), "On Specially Protected Natural Areas and Objects" (May 23, 2000), "On Wildlife Protection and Management" (1996), "On the Protection of the Atmospheric Air" (1997), "On the Legal Status of the Territories Contaminated as a Result of the Chernobyl Disaster" (May 12, 1999), "On Nuclear Security" (1998), "On the Supply of Drinking Water" (1999), "On the Protection of the Ozone Layer" (2001), "On Natural Resources Tax" (December 29, 2000). In addition, the following Codes deal with the regulation of environmental protection and natural resources management: "On Entrails" (1997), "Water Code" (1998), "Land Code" (1999), "Forestry Code" (July 14, 2000), and "Civil Code" (1998).

Bilateral and multilateral agreements and treaties, signed by the Republic of Belarus, and 11 international Conventions on environmental protection complement the Belarusian environmental legislation as set forth in Article 56 of the Law of the Republic of Belarus "On Environmental Protection" (1992). This Article mandates that if the provisions of an international treaty signed by the Republic of Belarus contradict those of the nationally adopted laws, the provisions of the international treaty shall apply.

The nature protection legislation of the Republic of Belarus has been constantly improving upon as some legal acts date back to 1992-1996 and need to be updated. In addition, certain

legal acts tend to focus on environment protection rather than provide a balance of ecological and economic interests in the context of social development. Furthermore, the laws remain too declarative and do not set forth concrete mechanisms of how individual citizens can realize their right to safe environment and be compensated for the damages suffered as a result of violations of environmental legislation. In addition, the environmental insurance guidelines and the system of fees to be imposed on those using natural resources are yet to be developed.

Special requirements for the privatization of natural resources are to be included in the sustainable development legislation, which is currently being drafted. Legislation will also address the issue of mandatory and voluntary environmental insurance. To this end, uniform rules and procedures for the mandatory insurance of civil responsibility for the accidental pollution caused by legal entities and individual entrepreneurs will be put in place along with a special legal act on compensation of damage caused by violations of environmental legislation. Investment and bankruptcy legislation should include an environmental perspective.

4. Addressing sustainable development problems

By fully incorporating the appropriate provisions of Agenda 21, the NSDS sets forth the principal guidelines for Belarus transition to sustainable development. Belarus has made certain headway in addressing the problems identified in Agenda 21.

4.1. Social and economic dimensions

The social and economic objectives and problems outlined in the NSDS fully correspond to those highlighted in the section "Social and Economic Dimensions " of Agenda 21, which include: combating poverty, changing of the unsustainable production and consumption patterns, improvement of the demographic dynamics, protection and promoting human health conditions, and furthering sustainable human settlements development. The mechanisms for the solution of these problems are stipulated in the Guidelines for Social and Economic Development of the Republic of Belarus for 1996-2000, as well as in annual social and economic development forecasts.

Over the last few years, all basic macroeconomic projections stipulated by the NSDS and the Guidelines for Social and Economic Development of the Republic of Belarus for 1996-2000 have been duly fulfilled. Belarus has reversed the economic recession and halted the decline in the living standards of the population. Its GDP, industrial output and consumer goods production have registered steady annual growth.

However, the following projections have not been fulfilled:

- Agricultural output dropped to 96.9 percent of the level registered in 1996 which falls short of the planned growth of 16 percent (NSDS) and of 10 to 19 percent (the Guidelines for Social and Economic Development);
- Housing construction showed an increase of 81 percent, which is significantly lower than the original projections (171 percent in NSDS and 76-101 percent in the Guidelines for Social and Economic Development);
- The inflation rate considerably surpassed the planned level.

A great deal of efforts was put into boosting the social sphere and raising the efficiency of scientific and educational institutions. As a result, at the beginning of the 21st century,

Belarus ranked 53rd among 162 countries of the world in terms of Human development index, leaving behind all CIS countries.

However, Belarus faces numerous problems. The long-term economic growth cannot be maintained by extensive use of resources anymore. Transition to the intensive pattern of development is hindered by the insufficient use of resource-saving technologies. The situation is further exacerbated by insufficient investment, outdated innovation system, and lack of competition and inadequate market infrastructure to boost the demand for new expertise and products. Numerous problems should be overcome in order to increase the efficiency of the social policy in the areas of incomes and labor remuneration, healthcare, demography, *etc.*

4.1.1. Population and sustainability

In early 1990s, Belarus entered a period of deep demographic crisis, which might be called the state of "demographic depression". At present the urban population tends to be the most stable, with the number of rural residents steadily declining.

In 1995 the population growth ceased and Belarus entered the stage of depopulation. As of January 1, 2001, a total of 9,990.4 million people inhabited Belarus, which equals the level registered in 1986. Only urban areas experience population growth, however the growth rate is going down from year to year. The population decline is largely due to the extremely low birthrate: 8.8 births per 1,000 inhabitants in 1997 (8.7 births in towns and cities; 9.0 births in rural areas). These statistics compare unfavorably to the average figures throughout the world (25 births per 1,000 inhabitants) and in Europe (11 births per 1,000 inhabitants). The Belarusian population is declining despite favorable fertility potential (there are approximately 5,000,000 men and women in the 15 to 49 age group and 2,000,000 people in the 20 – 35 age group).

Mortality dynamics is mainly determined by the ageing of population. The situation is further exacerbated by a mounting mortality rate among men. In 1999, it reached a record figure: 14.2 people per 1,000. The outlook is particularly bleak for rural areas. The rate of depopulation in the year 2000 equaled 4.1 percent (-0.2 percent in urban areas and -13.1 percent in rural).

Life expectancy is also on the decrease. The minimum level of 67.9 years was recorded in 1999 (62.2 for men and 73.9 for women). Life expectancy has been faster in rural areas, where men live for an average of 59.6 years. In comparison with developed countries (France, Sweden and Canada), the life expectancy in Belarus is roughly 8 years shorter for women and 13 for men.

The gender/age structure of the Belarusian population represents a typical regressive pattern with the dominating female population. The male population prevails in the employable age group (2.98 million men and 2.66 million women). The share of children aged 0-15 dropped from 24.5 percent in 1989 to 21.2 percent in 1999. The age structures of urban and rural areas differ significantly. An average rural Belarusian resident is older than an urban one. Roughly a third (34 percent) of the rural population are pensioners (16 percent in cities), 46 percent are labor capable (62 percent in cities), and 20 percent are children (22 percent in cities). The elderly population is placing a burden on people of employable age. In 1999, there were 371 pensioners per 1,000 residents in cities and 725 in rural areas. Since 1990, their share has gone up by 3.3 percent. Dependence in young age decreased by 6.5 percent due to the reduced birthrate.

The migration, both internal and external, displays the diminished migration flows for the period 1996-2000. Since 1996, the migration surplus has become sustainable. Over this period, migration has taken on new forms, including environmental migration, which covers individuals who abandoned their places of residence after the Chernobyl disaster, but later resettled in the contaminated areas.

To regulate the population migration, a network of migration services was set up and special laws adopted, including laws on refugees, on external labor migration, on entry and exit procedures, on citizenship, and others.

The following legal acts regulating demographic processes have been subject to modification: the Concept of State Demographic Policy and Guidelines for the Implementation of the State Demographic Policy approved in 1998, as well as the Law of the Republic of Belarus "On Demographic Security of the Republic of Belarus" adopted in 2001.

A close supervision of the demographic processes on the part of the state since 1998 has yielded positive results: the deterioration in the demographic situation has been slowed down. The rate of depopulation in 2000 was 0.8 percent lower than in 1999 and stood at -4.1 per mille. The total birthrate increased by 0.1 percent and equaled 9.4 per mille, while the mortality fell from 14.2 per mille to 13.5 per mille.

The Law "On Demographic Security of the Republic of Belarus" stipulates that the national and regional demographic security programs should be developed and implemented.

As the demographic dynamics are largely determined by the processes taking place within a society (primarily, in the economy, healthcare and education), the National Committee on Population of the Council of Ministers of the Republic of Belarus was formed. Its members are heads of the appropriate national state bodies. The Ministry of Labor and Social Security is responsible for the development and implementation of the demographic policy and coordination of the activities of state bodies in this area.

4.1.2. Healthcare

Appropriate healthcare and favorable living conditions are the cornerstones of sustainable development. Over the last decade, morbidity and mortality have been on the increase in Belarus, which in turn translated into lower life expectancy. These negative trends affected all age groups. The growing number of younger population suffering from the socially dangerous diseases, namely drug addiction, HIV infection and tuberculosis is also a cause for concern. Public health standards are further undermined by an increasing number of alcohol addicts. In this context, it is particularly worrying that medical institutions face shortages of equipment and medicines and thus are not always able to cope with the inflow of patients.

The current financing mechanism of the public health services is poorly adapted to new economic realities and proves to be ineffective. The share of GDP allocated for the development of healthcare was 2.1 times lower than stipulated in the Law "On Healthcare" (10 percent). Approximately 45 percent of medical institutions are housed in inadequate premises. More than 50 percent of medical equipment have been utilized for more than 10 years and is too antiquated to remain in use.

To overcome the negative trends in the healthcare and improve public health, the Government of the Republic of Belarus developed a Concept for the Development of Healthcare. The Concept was approved by the Council of Ministers of the Republic of Belarus in 1998. As of

2002, funds for the healthcare will be allocated taking into account the amount of financing that should be made available to an individual citizen in accordance with the budget.

Approximately 30 state healthcare programs (mostly interdepartmental) covering all critical issues (combating socially dangerous diseases, improving the material and technical base, introducing efficient staffing policies, encouraging the healthy life style, and others) have been implemented.

The Government has adopted the following laws to ameliorate the situation: "On Healthcare," "On Sanitary and Epidemiological Safety of the Population," "On Preventing Physical Disability and Rehabilitation of the Disabled," "On Ratification of the Protocol on the Unified Procedure for Applying Technical, Medical, Pharmaceutical, Sanitary, Veterinary, Phytosanitary, and Ecological Standards, Norms, Rules, and Requirements to Goods Imported from Member-States of the Customs Union," "On Ratifying the Basic Accord between the Government of the Republic of Belarus and the World Health Organization on Technical Cooperation."

To improve public health in the Republic of Belarus, much attention is paid to the promotion of a healthy life style. The Council of Ministers of the Republic of Belarus adopted a Resolution on "Measures to Promote the Healthy Life Style among Students". In 2000, the Government approved a State Program of Action to prevent and overcome alcoholism. Comprehensive measures to combat drug traffic have also been introduced.

Despite the insufficient financing and outdated technical base, the healthcare system of the Republic of Belarus has not only retained the accessibility of medical care to all population groups but also increased the volume of its services deal with the worsening medical demographic situation.

The Program of Social and Economic Development of the Republic of Belarus for the Years 2001-2005 defined healthcare as one of the priority areas of the state policy. By 2005, the Government is planning to raise the share of healthcare in the GDP to 7.5 percent.

4.1.3. Changing consumption patterns

Restructuring of economy is among the key priorities for the Republic of Belarus. Dematerializing of production, raising energy efficiency and tapping of national intellectual productive and resource potential are major mechanisms thereto.

Belarus treats the decrease in fuel and energy consumption as the major priority in the changing of its production and consumption patterns since the fuel and energy use per unit of the GDP strongly affects the competitiveness and viability of the national economy. The decrease in use of non-renewable energy and their replacement with renewable and alternative energy sources are the indicators of sustainable development. From 1995 to 2000, GDP grew by 36 percent with the simultaneous reduction in fuel and energy consumption (Fig. 4.1.1).

In percentage points to 1995
 Billion rubles
 Million tons oil equivalent
 _____ the GDP
 _____ Fuel and Energy

Fig. 4.1.1. The GDP growth and the consumption of Fuel and Energy

Belarus was the most economically developed republic of the USSR and after gaining its independence, it managed to retain its economic potential. Furthermore, Belarus significantly improved energy efficiency of its economy. (Fig. 4.1.2).

Kg oil equivalent

Ukraine Russia Belarus Poland Canada Finland US Germany

Fig. 4.1.2. Power consumption per GDP, kg of oil equivalent/USD as of 1995

The energy conservation policy implemented in the Republic of Belarus in recent years is in conformity with the international tendencies and principles of sustainable development: the share of local and alternative fuel has been steadily growing. (Fig. 4.1.3)

Locally extracted fuel resources (oil, gas, fuel peat, firewood, and others) meet 15 percent of Belarus fuel and energy needs.

Small hydroelectric power stations, wind power and bioelectricity plants, heliowater heaters, plants for briquetting and burning the agricultural waste products, *etc.* are most suitable for Belarus as sources of renewable energy.

In the period 1996-2000, the impact of energy sector on the environment reduced due to a decrease in the total consumption of fuel oil, boiler and stove fuel an upswing in the use of natural gas and the introduction of cleaner technologies.

Local fuel, total

Alternative and renewable energy sources

610,000 tons oil equivalent

614,000 tons oil equivalent

Fig. 4.1.3. Share of local fuel and energy as of total consumption of fuel and energy(compared to 1990)

The primary objective of energy conservation policy of the Republic of Belarus is the creation of the economy where fuel and energy resources are utilized efficiently. The implementation of the Republican Energy-Saving Program for 1996-2000 helped coordinate the efforts to solve organizational and technical fuel and energy-related issues on national level.

The energy conservation measures are financed by national and local budgets, industry innovation funds, the National Energy Conservation Fund, companies, as well as loans extended by foreign financial institutions.

The Republic of Belarus has been cooperating with international financial institutions to implement investment projects aimed at the effective use of energy resources and ecological safety. For instance, under the aegis of the UN European Economic Commission, the Committee for Energy Efficiency is executing a project entitled "Energy Efficiency Investment Project Development for Climate Change Mitigation". Another project called "Removing the Barriers to Greenhouse Gas Emissions Mitigation through the Use of Wood Waste for Municipal Heating and Hot Water Supply in Belarus" is being carried out with assistance from the Global Environment Facility.

The Committee for Energy Efficiency is collaborating with the UN Development Programme in the implementation of energy conservation projects and with the World Bank in the execution of an energy conservation project in the social sphere.

The effective energy conservation policy based on the introduction of the most efficient measures, including the use of secondary energy sources, local fuel and waste for the generation of heat, modernization of industry boiler and heating plants, introduction of new technologies, and the implementation of the World Bank project on energy conservation in the social sphere brought about a 28.5 percent decrease in energy consumption in 1996-2000.

Table 4.1.1.

Consumption of basic resources in the Republic of Belarus

Consumption per capita	Unit	1990	1995	2000
Electric power	Kw	4804,7	3141,6	3279,9
Oil	Kg	3882,4	1334,2	1341,9
Ferrous metal	Kg	364,7	93,1	111,2

Gross consumption of fuel and energy per one billion rubles of GDP (in 1995 average prices) dropped from 295 tons oil equivalent in 1995 to 207 in 2000. Consumption of oil equivalent per kilowatt-hour of electrical energy decreased from 297 g. in 1990 to 282 g. in 1995 and to 275 g. in 2000.

Recent years have seen a rise in the efficiency of forest resource management. Per 1,000 m³ of timber, the production of lumber increased from 328.2 m³ in 1995 to 397.2 m³ in 2000, plywood from 18.1 to 20.5, respectively, fiberboard from 5097 to 7266 m² (equivalent), paper and cardboard from 25.7 tons to 35.7 tons, and pulp from 6.7 tons to 9.1 tons.

The effectiveness of water resource management has also witnessed improvement. Water intake from natural sources and the use of fresh water for production have decreased. The share of recycled water in the total industrial water consumption went up from 85 percent in 1990 to 89 percent in 1995-2000.

In the Republic of Belarus sustainable development necessitates a more efficient management of fuel, energy, and mineral resources, as well as the restructuring of consumption patterns, factoring in local climatic conditions and the demographic structure of population.

4.1.4. Combating poverty

The eradication of poverty by providing the poor with opportunities to earn a sustainable livelihood is a precondition for sustainable development.

Before 1999, people whose income was less than 60 percent of the minimum consumption budget fell into the category of the poor. This standard was optionally used by local governments to identify the socially deprived citizens. However, these guidelines were not reflected in legislation and were largely recommendatory. The Law "On the Subsistence Minimum in the Republic of Belarus" which was passed in 1998 ruled that as of January 1, 1999 the minimum subsistence budget shall be deemed a fundamental criterion for the identification of poor citizens and that all such citizens (families) are entitled to state social support.

Belarus has introduced the following measures to combat poverty: providing population with employment opportunities, provision of the population with sufficient income-generating opportunities, introduction a social safety net through the system of social programs; social support of poor people; and improvement of the living standards of families.

To this end the following laws were adopted in the Republic of Belarus: "On Social Security of the Disabled in the Republic of Belarus," "On Veterans," "On Social Security of Citizens who Suffered in the Chernobyl Disaster," "On Social Services," and "On Welfare Payments to Families Raising Children." Additionally, annual employment programs, state programs for the support and development of private enterprise, a concept for the modification of labor remuneration schemes, the Presidential Program "Children of Belarus", the 2000-2005 Comprehensive System of Social Security Measures of the Republic of Belarus, the Guidelines for the State Family Policy, the State Housing Program, the Program for the Support of Elderly Citizens and other legal acts have been adopted to tackle social problem.

The state relies on a variety of tools to provide support for the needy: welfare payments to families raising children, housing subsidies, privileges to certain population categories, targeted social assistance, financial support, and social services through social security institutions.

Despite the above-mentioned measures, Belarus still has a great deal to accomplish in terms of poverty eradication. According to the official statistics, the number of people living below the poverty line increased by 6 percent and went up from 3,956,600 in 1996 to 4,192,100 in 2000. However, it should be noted that a portion of individual incomes goes unreported and thus the figures above do not fully reflect the reality.

Poverty stems from low household incomes. Approximately 80 percent of poor families have only one working member whose salary is not sufficient to support a family of 3-5 people.

Since January 1, 2001, Belarus has been rolling out a system of targeted social assistance to support socially vulnerable families and individuals who have limited income-generating possibilities. To develop the mechanisms for a unified targeted social assistance system, a pilot project will be launched in 2002. If successful, the pilot results will find nationwide application. The Comprehensive System of Social Security Measures for the years 2000-2005 was developed to increase the efficiency of social assistance. If implemented, the system will allow increasing population incomes, improving assistance to low-income households and raising the efficiency of social security.

4.1.5. Sustainable human settlements

One of the principal objectives of sustainable development as stipulated by the National Sustainable Development Strategy and Agenda 21 is the improvement of social, economic and environmental conditions in urban and rural human settlements and the creation of favorable living conditions by ensuring the protection of environment, as well as cultural and historic heritage.

At present, the development of human settlements in Belarus is characterized by the polarization in the distribution of population, expansion of urban areas, formation of agglomerations, decline of small towns and rural settlements.

The need to battle the consequences of the Chernobyl disaster complicates the solution of the problems of sustainable development of human settlements

Contaminated areas account for about 12 percent of the settlements, that host 20 percent of the overall population. In addition to radiation protection, the following rehabilitation measures are of crucial importance in these settlements: development of engineering and transport infrastructure; construction of housing and public services facilities; job creation, *etc.*, depending on the social and demographic situation. Primarily, these measures focus on major cities.

The Law "On Urban Planning Guidelines in the Republic of Belarus" was adopted in 1994 to promote sustainable development in the field of urban planning. A draft law "On Urban Planning and Zoning" and a set of other legal acts are presently being developed to increase the efficiency of city planning activities.

The State Program of the Complex Territorial Organization of the Republic of Belarus (SPCTO) set forth the state policy in the realm of sustainable development of human settlements. It defines the conditions and prerequisites for the territorial organization, sets priorities and outlines various short-term, medium and long-term development strategies for different regions and cities. SPCTO is based on sustainable development principles.

In 1996, the Ministry of Architecture and Construction of the Republic of Belarus initiated the creation of the National Commission on the Development of Human Settlements in the Republic of Belarus. In cooperation with national, regional, and local authorities, the Commission seeks to strengthen the economic base of cities by improving the state of vital communications and environmental protection, and implementing the housing reforms.

The Ministry of Architecture and Construction of the Republic of Belarus supports the National Commission with necessary information and performs analytical work while the Habitat Center of the National Commission on the Development of Human Settlements in the Republic of Belarus provides the Commission with the organizational and technical support. At the end of 2001, the National Commission was transformed into the Interdepartmental Council for Housing Reform and Development of Human Settlements.

The National Commission supervised the preparation of a National Concept for the Development of Settlements in the Republic of Belarus (1996) and a National Plan of Action for the Development of Human Settlements in the Republic of Belarus up to the year 2000, the two documents that embrace all fields directly or indirectly influencing the habitats in urban areas.

The Government implemented the Program of High-Priority Measures for the Comprehensive Development of Human Settlements and Territories of the Republic of Belarus up to the year 2000. This Program encouraged local authorities to build capacity for sustainable development in urban and rural settlements and improve their habitats. In compliance with the Program, regional programs for comprehensive development of human settlements and territories and improvement of habitat for 1998-2000 and 2001-2005 have been developed and implemented.

The Republic of Belarus has elaborated and has been persistently implementing a strategy for the introduction of a new generation of housing. The Program seeks to improve the housing quality, devise optimal planning and construction solutions, put in place

comprehensive energy saving measures, as well as introduce new design systems, efficient construction materials that will decrease construction costs.

In the construction of residential houses, priority is given to new energy efficient technologies based on the use of local construction materials, including renewable ones. New construction technologies to meet the principles of sustainable development are presently being developed.

A number of regions launched eco-houses construction programs. The eco-houses have a high rate of heat insulation and are fairly affordable. In 1999, this activity was one of the success stories of the UN Program Human Settlements Programme (Habitat).

In 2000, the Joint Project of the Belarusian Division of the International Academy of Ecology and the Habitat Center of the National Commission "Construction of Economical Social Housing from Natural Renewable Materials" received the second prize of the Energy Globe Award in the category "Building and Housing" (Lintz, Austria). In addition, projects for urban eco-houses featuring "zero energy consumption" were developed.

The state policy, actions and guidelines for further activities in the field of sustainable human settlements are described in detail in the National Report "Problems and Tendencies in the Development of Settlements in the Republic of Belarus".

4.2. Conservation and Effective Management of Natural Resources

In recent years, the Republic of Belarus has taken comprehensive measures to preserve the natural resources and protect the environment.

4.2.1. Protection of the atmosphere

Atmospheric protection is an integral part of sustainable development. In 1996-2000, Belarusian enterprises undertook 1,064 projects to reduce emissions and built or reconstructed 1876 gas and dust clearing plants.

Pollution prevention measures including the shift to natural gas combustion and introduction of advanced combustion technologies decreased the emissions of sulfur compounds by 190 percent and nitrogen oxides by 70 percent in 1996-2000. The Republic of Belarus fulfilled its obligations under the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution Concerning the Control of Emissions of Nitrogen Oxides or Their Transboundary Fluxes and the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on the Reduction of Sulphur Emissions or Their Transboundary Fluxes by at Least 30 per Cent.

The Republic of Belarus has been implementing the sustainable forest management policy, which includes ceasing the melioration of peat bogs and mires, executing the rehabilitation of abandoned peat lands, and conserving wetlands, as stipulated by the UN Framework Convention on Climate Change.

Belarus has also been complying with the international accords on the reduced use of ozone-depleting substances. The utilization of these substances decreased from 1,996.7 tons in 1989 to 274.2 tons in 2000 and this trend is continuing. Since January 1, 2000, Belarus has ceased to import and export the most dangerous ozone-depleting substances of groups 1 and 2

outlined in the Appendixes A and B to the Montreal Protocol on Substances that Deplete the Ozone Layer.

4.2.2. Management of land resources

The comprehensive approach to planning and management of land resources resulted in the following achievements:

- The new version of the Land Code of the Republic of Belarus became effective (1999);
- The State Program for the Management and Protection of Land (2000) was duly carried out, resulting in improved land management, conservation and rehabilitation of degraded lands;
- The State Plan for Complex Territorial Organization of the Republic of Belarus and the Program "Conservation and Management of Meliorated Lands for the Years 2000-2005" were elaborated and approved (2001);
- The Law of the Republic of Belarus "On the Legal Status of Territories Contaminated as a Result of the Chernobyl Disaster" (1999);
- In the past five years, the area of agricultural lands excluded from crop rotation as a result of the nuclear contamination has decreased from 256,900 to 227,800 hectares owing to their rehabilitation.

Despite the above, a complex system for management and protection of land resources has yet to be created. In a number of regions, cities and other settlements, the forecast, program, and design documentation for land management, urban spatial development is outdated. A legal act regulating land management issues is not yet in place.

The structure of land resources has changed due to (a) certain land lots owned by collective farms were reallocated to citizens and subsequently included in the category of urban land, (b) some land plots were transferred to the forest category, (c) the low-yield agricultural and abandoned land was afforested, and (d) some land plots were allocated for urban development, desolation and wetlands rehabilitation. These processes are taking place against the backdrop of insufficient development of new land plots and improvement of already cultivated land.

According to the cadastral valuation of agricultural land, more than 10 percent of arable land cannot be used for efficient agricultural production even on condition of standard productivity and production costs and should be urgently excluded from the agricultural use.

Increased efficiency of land management and improved productivity of the agricultural sector shall be deemed one of the principal short-term objectives, which if achieved will be a stepping stone to sustainable rural development.

4.2.3. Management of forest resources

In recent years, forestry and forest industry of the Republic of Belarus have undergone certain changes. The Government developed a number of new documents that determine the industry strategy and introduce the principles of sustainability. The Forestry Code of the Republic of Belarus adopted on July 14, 2000 lays down the legal basis for the effective management and protection of forests. In 2000-2001, a package of legal acts regulating all aspects of forestry was developed, the most significant being "Ordinance on Forest Certification in the Republic of Belarus" (2000), "Procedure for Forest Monitoring" (2001), and "On the Age of Forest Cutting" (2001). This legislation ensures the environmentally sound management of forest resources, their protection and development.

Implementation of the NSDS-1997 goals and objectives led to the improvement of the overall condition of forests and their valuation, which in turn allowed the expansion of the harvesting of timber and other forest products. However, from 1997 to 2000 certain targets in the areas of forest management and reproduction were not fully reached.

The following positive changes in the realm of forestry were in evidence over the last few years: (a) expansion of the total forest area, (b) increase in the amount of mature stand, which had a positive impact on the forest industry, (c) introduction of the environmentally-sound forest management, (d) conservation of the biological diversity and the genetic diversity of forest plantations (Table 4.2.1).

However, a significant reduction in the total area of young forests, particularly those of the first class, is a worrying sign. This negative trend demonstrates that the NSDS-1997 objectives regarding the annual rate of reforestation of 70,000 hectare were missed. The reforestation covered from 40,000 to 45,000 hectares, including from 30,000 to 35,000 hectares of silviculture. In 2000 only 31,000 hectares were reforested.

Table 4.2.1

Age Structure of Forests of the Republic of Belarus

#	Age Group	As of 1.01.1994		As of 1.01.2001		Difference Thousand ha
		In Thousand, ha	%	In Thousand ha	%	
1	Young forests, total	2699	37	2158	28	-541
	Of these, first group	889	12	713	9	-176
	Medium age	3267	44	3566	45	+299
	Maturing	1055	14	1498	19	+443
	Mature and Overmature	349	85	623	8	+274
	Total	7370	100	8558	100	+299

From 1996 to 2000 the share of forest-covered areas grew from 35.5 to 37.8 percent of the territory. In the next seven to ten years, the share of forests will climb to 39-39.5 percent. The area of first group forests including water protection forests (31 percent), protection forests (26 percent), recreational and buffer zones (30 percent) has expanded significantly and presently stands at 4,601,000 hectares. Therefore, the first group forests amount about 50 percent of the total forest. The area of first group forests (where logging is limited and the focus is on reforestation) is sufficient and a further increase would have a negative impact on the economy.

The forest structure is relatively stable: conifers account for 60.2 percent, deciduous - for 33.6 percent, and bushes 2.3 percent. However, conifers covered area decreased by 6 percent due to unfavorable ecological situation. These areas have to be reforested with oaks.

In the period under review forest industry hasn't witnessed any significant changes. In addition, Belarus has not been fully tapping its forest industry potential – it cuts only 70-80 percent of forest of optimal level. The figure for 2000 stood at 76 percent. Undercuts are caused by economic inefficiency of harvesting in remote and waterlogged locations. The use of wood for power generation stipulated by the NSDS is hindered by the lack of capital investment.

Intensive forestry research was conducted in 1997–2000 State Research & Development Programs (SRDP) “Forest: Ecology and Resources” (1996-1999) and “Forests of Belarus” (1999-2000) set the institutional and technological framework for NSDS implementation in the field of forestry.

4.2.4. Sustainable rural development of sustainable agriculture

The agricultural sector, which strongly influences the living standards of the population, is currently going through a difficult stage. Agricultural output has seen a considerable decrease. The situation is further exacerbated by the fact that financial and economic mechanisms, including pricing, taxation and crediting, have not yet been adjusted to reflect the new economic realities. The age and professional structure of employees in the agricultural sector have been deteriorating. Staff turnover is high, as the wages are low and are not paid on time. These negative trends menace sustainable development process.

NSDS-1997 mandates that the situation in the agricultural sector should be improved through the development and implementation of comprehensive programs for multifunctional agriculture to make agricultural production efficient by means of diversification of agricultural and non-agricultural employment as well as the development of infrastructure in the rural areas.

Sustainable rural development was given a boost with the adoption of the Laws "On Farming" and "On the Development of Private Homestead Plots", as well as programs on the transfer of land to village councils and to individual citizens.

The Program for the development of the agriculture and related industries for the years 2001-2005 stipulates the introduction of contemporary management patterns to ensure a more effective use of resources. The development of agriculture should rely on its intensification and reduction of production losses during harvesting, reprocessing and storage.

The following measures should increase agricultural output and competitiveness of the agricultural sector: (a) deeper specialization of agricultural production, (b) efficient use of internal resources and reserves, (c) concentration of capital in high-growth areas of agriculture, (d) introduction of resource-saving management methods, (e) cooperation and integration of production and capital of the interrelated agricultural and industrial entities, and (f) modification of the labor remuneration system.

Special attention should be paid to the development of rural areas. They cover most of the Belarusian territory. More than three million people, or 31 percent of the population live in rural areas. The majority of the population of more than 23,400 settlements that are situated in rural areas is engaged in agriculture.

The problems of rural development exacerbated in the last decade. The demographic situation and living standards of the rural population have been deteriorating. About 70 percent of settlements have less than 100 inhabitants and the share of such settlements keeps growing. Since 1996, the number of rural settlements has decreased by 1.5 percent. The prevalence of elderly population leads to a low development potential of rural settlements. The communal and transport infrastructure in the country is underdeveloped. These tendencies are most visible in remote rural areas.

The Republic of Belarus pays special attention to rural areas contaminated by radioactive wastes. From 1996 to 2000, more than 4,400 people or 2,100 families were resettled in the cleaner regions of Belarus. A total of 4,800 flats (305.000 sq. m.), public schools for 5,400 children, hospitals for 1,300 patients, and polyclinics for 2,000 people were built using the finances assigned for the mitigation of the Chernobyl disaster consequences.

To improve the living conditions in the affected areas, 643 km of gas and 178.6 water pipelines were laid. Comprehensive programs for social and economic rehabilitation were elaborated for 10 districts of Gomel and Mogilev Regions. The strategy for the rehabilitation of Narovlya and Stolin districts was also finalized.

4.2.5. Conservation of biological diversity

Conservation of the biological diversity is one of top priorities for the Belarusian Government. The National Strategy and Plan of Action for the Conservation and Effective Management of Biological Diversity were approved by the resolution of the Council of Ministers of the Republic of Belarus (1997). The Government tasked the ministries with the development of a set of actions that would be undertaken to facilitate the execution of the above-mentioned Plan of Action. In 1998 the Concordia Center was commissioned to develop an analytical survey "The State of the Biological Diversity of the Republic of Belarus and its Management." In addition, a seminar was held in Minsk on March 26, 1998 to discuss the implementation of the National Strategy and Plan of Actions for the Conservation and Effective Management of Biological Diversity in Belarus and key provisions of the First National Report on the Execution of the Convention on Biological Diversity, which was subsequently finalized.

Certain endangered species recovery and conservation programs achieved a measure of success. However, the loss of biodiversity and landscapes continues due to the transformation and destruction of their natural habitats, excessive use of resources, pollution and introduction of alien plants, animals, and anthropogenic objects.

The habitats in urbanized zones are becoming more scarce and fragmented. As a result of the industrialization of forestry, the primeval forests are being replaced with silviculture. The share of the most valuable broad-leaf forests has been declining.

The management of wetlands has been drastically reviewed. In contrast to the large-scale melioration that took place in the middle of the 20th century, the restoration of previously drained wetlands have been undertaken in the last decade. Since the mid-1990s, the quality of surface waters has been slowly improving due to the reduced use of fertilizers within river basins.

Foreign specialists and organizations are getting more extensively involved in the area of bio-diversity conservation. In addition, the awareness of the public at large of its responsibility for the conservation of bio-diversity has been on the rise. Belarus also uses the international experience in this area to increase the effectiveness of locally organized bio-diversity protection schemes.

However, the potential of international cooperation is yet to be fully realized. Belarus efforts to protect biological diversity are hindered by lack cooperation among state officials, international organizations and both local and foreign academia. State policy requires support from national eco-NGOs as well as major international ones.

If Belarus is to successfully implement the principles of sustainable development, it should extend its efforts beyond the execution of the Convention on Biological Diversity to include other conventions aimed at the preservation of species and habitats.

4.2.6. Environmentally sound management of biotechnologies

Various advanced bio-technologies are used in the medical industry and agriculture along with traditional ones that include bread baking, brewing, milk processing, vegetable souring, distillation, *etc.* Belarusian industry produces more than 300 different kinds of bio-technological products (anti-microbial, anti-leukocytic, antiseptical, and anti-tumoral medicines, amino-acids, vitamins, ferments, hormones, nucleic components, vaccines, blood substitutes, diagnosticums, food additives, veterinary protection means, plant and animal growth regulators, as well as insecticide, anti-bacterial, anti-fungal, and anti-virus bio-preparations, *etc.*)

However, research in the areas of genetic engineering and biotechnology remains rudimentary and is held back by insufficient financing and the lack of professional staff, modern equipment and reagents.

As other technologies, genetic engineering has both indisputable advantages and negative effects. Specifically, the use of genetically modified organisms might have an adverse impact on human health and environment. Therefore, particular attention is being paid to security issues internationally. In 2000, member countries of the Convention on Biological Diversity adopted the Cartagena Protocol on Biosafety aimed to ensure appropriate security for transfer, handling, and use of genetically modified organisms that might have an unfavorable impact on the biological diversity and human health.

The most critical task for Belarus in the field of international cooperation in biosafety is to join the Cartagena Protocol on Biosafety. This would allow it to effectively regulate import and export of genetically modified organisms as well as the use of imported trans-gene organisms and products in the national economy.

In the first place, the Law on "On Safety in Genetic Engineering" should be adopted to define the basic concepts, tasks, directions, and legal fundamentals of the state policy in biological security. This should be followed by the development and adoption of the appropriate legal acts and instructions to regulate a variety of aspects of genetic engineering.

4.2.7. Protection of the quality and supply of freshwater resources

The water resource indices for the period from 1997 to 2000 did not meet the *estimations* indicated in NSDS-1997. Water intake from water bodies was 37.8 percent lower than planned and water utilization 27 percent. The total water consumption decreased by 37.7 percent, discharge of polluted and insufficiently purified water by 16 percent and discharge of purified water meeting the norms by 12.8 percent. However, the loss of water during transportation increased by 31 percent and the discharge of purified water by 1.7 percent (Table 4.2.2).

Table 4.2.2

Indices of Intake, Use and Protection of Water Resources

Indicators (the NSDS-1997 planned level /real level	Years				
	1996	1997	1998	1999	2000

Water intake, million m ³	2125/ 2014	2230/ 1920	-/ 1907	-/ 1885	2595/ 1883
Water utilization (total), million m ³	1870/ 1881	1960/ 1726	-/ 1716	-/ 1709	-/ 1700
Of these:					
For drinking	680/ 773	717/ 785	-/ 793	-/ 768	834/ 782
For production	580/ -	600/ -	-/ 532	-/ 539	585/ 529
For agriculture	270/186	285/174	-166	-159	330/155
For irrigation	15/9	16/8	-/6	-/6,7	18/5
For pond fishing farms	325/254	342/218	-219	-218	393/-
Total water consumption (including recycled water), million m ³	9040/ 8275	9495/ 8475	-/7764	-/7731	11050/ 6155
Transportation losses, million m ³	89/-	89/-	-/-	-117	103/117
Total discharge of sewage water to surface water bodies, million m ³	1337/ 1199	1405/ 1172	-/ 1181	-/ 1170	1635/ 1173
Of these:					
Polluted and insufficiently purified	64/29	-/27	-/27	-/26	-/25
Purified at water treatment	846/871	890/869	-878	-875	1040/884
Clear without purification	427/424	515/299	-/278	-/269	-/265

The National Plan of Action for the Effective Management of Natural Resources and Environment Protection of the Republic of Belarus for the Period 2001-2005 defines protection of surface water bodies and aquifers against pollution as a primary task in the field of water management.

To address the critical problems of environmental protection, Belarus is cooperating with international financial organizations to attract international grants and investments for enhancing water protection measures.

4.2.8. Environmentally sound management of toxic chemicals

Environmentally sound management of toxic chemicals is part of sustainable development. It directly affects the living conditions of population.

NSDS-1997 sets forth a variety of measures that cover all areas of chemical safety. In execution of the obligations assumed by Belarus under the international conventions and treaties on transportation of dangerous cargoes, the Law "On the Transportation of Dangerous Cargoes" (2001) was adopted. The Law "On Security at Hazardous Industrial Facilities" was issued in 2000 to protect an individual and the society against such risks.

In the year 2000, 395 enterprises and organizations falling into the category of hazardous industrial objects were functioning in Belarus. Under the Government Resolution of 01.01.2002, safety regulations were prepared for all chemical, oil-refining, and other enterprises included in the "List of High-Risk Industrial Facilities." The Resolution of the Council of Ministers "On State System for the Prevention and Response to Emergencies," which was adopted in 2001, sets forth the system for preventing major industrial accidents. The State Program for the Implementation of the State System of Prevention and Response to Emergencies for the Years 2002-2006 has been developed and is presently effective.

In addition, a set of measures to reduce the hazard of use of toxic chemicals in industry and agriculture has been rolled out. To prevent contamination by pesticides, the utilization of mercury and chlorine-containing substances for plant protection has been drastically reduced. The state system for the registration of pesticides mandating their toxicological evaluation has also been put in place. The introduction of obligatory state hygienic registration and regulation of chemical substances and materials has boosted the chemical safety of population. In execution of the Resolution of the Council of Ministers "On Measures to Restrict the Transboundary Transfer of Hazardous Objects, Substances, and Chemicals" adopted in 1993, the Chief Sanitary Doctor of the Republic of Belarus issued in 1996 the Resolution "On the Procedure for State Hygienic Regulation and Registration of Hazardous Chemicals." Over the recent period, 38 compounds have been registered.

So far, the Republic of Belarus has not joined the Globally Harmonized System (GHS) for the Classification and Labelling of Chemicals, as it has not been adopted yet. Moreover, the national system of classification and labeling currently in force differs from GHS and the introduction of the latter would contradict the national legislation in the realms of healthcare, labor and environment protection.

The further development of the chemical safety strategy should incorporate internationally adopted measures, including control over the handling of chemicals at all stages of their life cycle.

4.2.9. Waste Treatment

The Law of the Republic of Belarus "On Wastes " was reviewed in conformity with the NSDS-1997 guidelines, and its new version was adopted in 2000. Unlike its previous version, the Law took into account the provisions of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, which Belarus joined in 1999. The Ministry of Natural Resources and Environmental Protection also developed and approved "The Rules for Handling Industrial Waste."

In 1998 the Council of Ministers issued a Resolution to establish a Belarusian Concern for Material Resources, a national waste recycling authority, and develop a Complex of Urgent Waste Treatment Measures for the years 1998-2000. In addition sectoral programs for recycling of lignin from hydrolysis plants were developed.

The National Program for Municipal Wastes Treatment was adopted in 1998.

The Belarusian Scientific Research Center "Ecology" was formed in 1999 to monitor the execution of the provisions of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

The volume of industrial waste recycled in 2000 was only 82 percent (3.6 million tons) of the projected amount of 4.4 million tons. (Table 4.2.3). The amount of the municipal wastes treated met the NSDS-1997 targets. Currently, municipal wastes are being disposed at landfills as waste treatment facilities in Minsk and Mogilev are presently closed for repairs.

Table 4.2.3

Waste Production and Recycling

Indicators	1996	1997	2000
Industrial waste production, million tons	18,1	22,3	23,3

Growth rate, percent	93,6	123	104,5
Municipal waste production, million m ³	8,6	8,8	9,8
Growth rate, percent	94,4	102,9	111,9
Industrial waste recycling, million tons	3,6	3,5	3,6
Growth rate, percent	93,6	123	104,5
Wastes accumulated, million tons	633,2	651,9	703,6
Growth rate, percent	93,6	123	104,5
Hazardous wastes accumulated, * thousand tons	24,4	25,9	23,3

**The figures in the table above are much lower than those indicated in the NSDS-1997 due to the initiative of "BelarusKaliy" Mining Company, that excluded potash fertilizers by-products from the list of hazardous wastes.*

To prevent or minimize the impact of landfills on environment Minsk, Grodno and Mogilev regions elaborated environmentally and economically sound schemes for spatial distribution of landfills. Approximately 30 disposal sites passed environmental certification.

Currently Belarus has roughly 94,000 tons or 120,000-150,000 m³ of radioactive wastes, which can be subdivided into the following types: solid, liquid, spent nuclear fuel, and contaminated sewage sludge. Temporary Sanitary Regulations for Handling Radioactive Waste Generated by Rehabilitation of Contaminated Regions, which were adopted in 1998, govern the activities of enterprises engaged in radioactive waste processing.

4.2.10. Sewage Sludge Treatment

In compliance with Agenda 21, NSDS-1997 stipulated that sewage sludge treatment guidelines be developed and implemented by the year 2000.

Comprehensive institutional and financial support, water treatment facilities installation and the increase in recycling of water reduced the amount of sewage produced. (Table 4.2.4).

Since 1995, the total amount of sewage has decreased by 147 million m³ and in 2000 accounted for 89.9 percent to the 1995 level. Similar trends can be detected in the sewage discharge to surface water bodies, which was down by 155.9 million m³ or by 11.7 percent.

However, the discharge of polluted sewage water has not been stopped as stipulated by NSDS-1997 and equaled 25 to 26 million m³ in 2000.

Housing and communal services produce about 60 percent of sewage, followed by industry (28 percent) and agriculture (about 12 percent). Although most of the sewage is treated, the share of discharged waters containing pollutants remains relatively high and stands at 80-85 percent).

In the year 2000, approximately 15,000 tons of suspended matter, 78,000 tons of chlorides, 64,000 tons of sulfates, 11,000 tons of organic compounds, 230 tons of oil products, 18 tons of copper, 38 tons of zinc, 1 ton of nickel, 18 tons of chrome, and other substances were discharged into water bodies. Most of these are valuable raw materials.

Considerable part of municipal and industrial sewage is subject to treatment. Water treatment facilities in 37 large settlements process 89 percent of all sewage. However, powerful water treatment facilities are not available in a number of municipalities.

The share of polluting substances coming with rainwater in urban and rural areas ranges from 50 to 60 percent of the total volume. In addition, polluting substances come from the neighboring countries.

Table 4.2.4.

Sewage Discharge Indicators

Indicator	1995 ã.	1996 ã.	1997 ã.	1998 ã.	1999 ã.	2000 ã.
<i>Total sewage, mln m³</i>	1460,7	1324,4	1296,4 8	1315,05	1314,5 1	1313,71
In percentage points to 1995 including dischrge to natural water bodiese, mln m ³	100,0	90,7	88,8	90,0	90,0	89,9
	1329,4	1199,4	1172,0 6	1181,53	1169,8 4	1173,46
In percentage points to 1995 including contaminated water	100,0	90,2	88,2	88,9	88,0	88,3
	64,2*	29,2	27,42	26,88	26,27	24,69
In percentage points to 1995 discharged pure water without treatment	100,0	45,5	42,7	41,9	40,9	38,5
	424,2	299,2	276,10	276,76	268,71	265,01
In percentage points to 1995 including treated pure water	100,0	70,5	65,1	65,2	63,3	62,5
	841,0	872,0	868,54	877,89	874,87	883,76
In percentage points to 1995 discharged to filtration fields, rake-outs, accumulators, caves	100,0	103,0	103,0	104,0	104,0	105,1
	128,3	122,1	121,66	131,52	142,43	137,87
In percentage points to 1995 <i>discharged into aquifers</i>	100,0	95,1	94,8	102,5	11,0	107,5
	2,8	2,94	2,76	2,00	2,23	2,38
In percentage points to 1995	100	105,0	98,6	71,4	79,6	85,0

In general, despite the positive trends in sewage discharge, the outdated and ineffective water treatment facilities in a number of cities are unable to properly treat the discharged waters, which retains high concentrations of pollutants.

4.3 Strengthening the Role of Major Groups

Sustainable Development decision-making requires the participation of all Major Groups. State policy in the domain of Sustainable Development proves to be successful only when it reaches all strata of population and takes into account the interests of Major Groups, including Women, NGOs, Business, Children and Youth.

4.3.1. Strengthening the role of Major Groups, including Women, Children and Youth

Women comprise more than 53 percent of the population of the Republic of Belarus. Their status and role in the economic and social development, however, is lower than that of men. To improve the status of women, the following steps were taken in the Republic of Belarus:

- The National Plan of Action to Improve the Women's Status for 1996-2000 was developed;
- The National Program "Women of the Republic of Belarus" including measures to improve the situation with women's employment, expand women's participation in decision-making, and adapt women to new social conditions, was developed and approved;
- The National Council on Gender Policies of the Council of Ministers of the Republic of Belarus was formed;
- The National Plan of Action on Gender Equality for 2000-2005 was developed and approved.

The following supreme legislative and executive bodies supervise gender policy in Belarus:

- Commission on Social Issues of the National Assembly of the Republic of Belarus;
- Commission on Labor, Social Issues, Healthcare, and Physical Culture and Sports of the National Assembly;
- Department of the Social and Cultural Policies of the Council of Ministers of the Republic of Belarus;
- Department of the Targeted Social Assistance and Gender Problems of the Ministry of Labor and Social Security.

Measures were taken to expand the participation of women in decision-making. In all parliaments that were earlier elected in the Republic of Belarus (since 1996 in the Chamber of Representatives), women accounted for less than 4.5 percent of the total number of deputies. After the elections in 2000, the women representation in the Chamber of Representatives increased to 10.3 percent. In the Council of the Republic of the National Assembly of the Republic of Belarus, women account for 30 percent of all deputies.

In the spring of 1999, about 9,000 women, or 37 percent, were elected deputies of local councils. However, though women's representation in the local councils is reasonably high, a few hold top positions in those Councils.

Only one woman, the Minister of Labor and Social Security, is a member of The Council of Ministers. Ten women are Deputy Ministers. Although women constitute the majority of employees in all ministerial departments of the Republic of Belarus (with the exception of the Ministries of Internal Affairs, Defense, and Foreign Affairs), only 30 percent of women employees hold top positions. There are no women heading Regional Executive Committees and only two women are Deputy Chairpersons.

All citizens of the Republic of Belarus irrespective of their social status, race, nationality, sex, religion, and political convictions have the right to become a civil servant (Article 7 of the Law of the Republic of Belarus "On Civil Service"). Women are entitled to have equal remuneration with men for equal work and have the equal right to education.

Unfortunately, women's rights are not realized in practice. Unemployment among women, though reducing according to official data, is much higher than that of men. While the official unemployment rate is 1.7 percent, women's unemployment equals 2.6 percent.

At the end of 2000, the men to women salary ratio was 100 to 85. A positive trend is the leveling off of this ratio (81 percent in 1996, 80.8 percent in 1997, 84.9 percent in 1998, and 85 percent in 1999). However, the majority of women hold positions that provide little prospect for career advancement. High level of feminization in a number of professions is usually an indicator of their low social status.

A very important factor in sustainable development capacity building is the advancement of women's non-governmental organizations. According to the official statistics, 28 women's NGOs, comprising 1.1 percent of all NGOs are functioning in Belarus. Seventeen women's NGOs have the status of national-level organizations. Of these, the major NGOs are the Belarusian Union of Women, the Belarusian Organization of Working Women, and Women's Independent Democratic Movement. The priority directions in the activities of the women's NGOs are as follows:

- Human rights and participation in decision-making;
- Assisting women in business and professional activities;
- Social services;
- Elimination of violence against women, including domestic violence

Yet, the women's movement has little effect on the social development of the country. Many women's NGOs are in the making. Some of them break up and cease to exist.

Therefore, the Republic of Belarus has made certain efforts to change the social status of women and involve them in decision-making according to Agenda 21. To speed up the implementation of the provisions of Agenda 21, the following actions should be taken:

- Active involvement of women in decision-making, creation of equal conditions and opportunities for women's participation;
- Rearranging of legislative framework to enable equal representation of women in the elected bodies, including the Chamber of Representatives;
- Gender-balanced representation in decision-making positions and executive bodies;
- Elaboration of a program in of women's private enterprise support.

Involvement of young people in decision-making is of high importance for successful Sustainable Development policy. This age group comprises slightly more than 20 percent of the Belarusian population.

An effective form of the involvement of young people in the decision-making process is their participation in NGOs and public advisory bodies.

47 national and 11 international youth associations, 10 national children's associations are registered in Belarus. In addition, 40 national associations, and 12 funds provide support to young people. According to the public youth association "United Way", youth NGOs account for only 4.4 percent of the total number of NGOs, which is incommensurable with the share of young people in the country's population structure.

The consultation process between the Government of the Republic of Belarus and youth NGOs is scarce at all levels. The mechanisms that would provide the young people with access to information and would allow them to express their views regarding Government decisions, including those related to the implementation of the 21 Agenda, are not used efficiently.

This conclusion is proved by the survey conducted among leaders of youth associations regarding their participation in the discussion of legal acts. Only 1.9 percent of those polled replied that they participated in the discussion of legal acts, 46.4 have never participated in such discussion, and 36.9 were not sure.

NGOs' participation in addressing ecological problems has recently increased. The Ministry of Natural Resources and Environmental Protection along with a number of ecological NGOs initiated the creation of a Public Coordination Council of Ecological Organizations; it was formed in the summer of 2001. Representatives of three youth organizations became its members: "Ecological Initiative Belaya Rus", "Next Stop - New Life" and the Belarusian Association of Children and Young People, which comprise 18 percent of all council members. To raise the efficiency of the Council, a transparent procedure of decision-making, including strict allocation of responsibilities between the Council and the Government should be developed and the role of youth organizations should be specified.

In November 1999, the Law "On State Support of Youth and Children's Organizations in the Republic of Belarus" was adopted. The law guarantees equal rights to state support for all youth NGOs. However, the mechanism for the distribution of budget funds for the implementation of the state youth policy needs to be improved improving.

Before the autumn of 2001, the state body responsible for the implementation of youth policy and the support of youth organizations was the State Youth Affairs Committee. However, almost two thirds of the leaders of youth organizations said that their organizations "have no contacts" with the State Committee. In fact, the Committee cooperated with no more than 10 associations and did not establish contacts with other organizations. At present, the Ministry of Education and its youth department bear responsibility for the state youth policy.

Agenda 21 implies that young people should participate in decision-making on a wide scale, specifically with regard to decisions that might have a long-lasting impact on the country's environment, economy, and social life.

At present, about 1.9 million children comprising 20 percent of the population live in Belarus. One fourth of the children resides in areas contaminated by radioactive isotopes of cesium, strontium, and plutonium. The radioactive emanation, as well as the social and psychological stress and other unfavorable effects are harmful to children's health.

Children and adolescents suffer from the disorder of immune and digestion systems. Medical inspections of children of school and pre school age show that 76.3 percent of children in the contaminated areas have functional deviations from the norm and 22.4 percent fall ill frequently and for long periods of time. 39 percent of children starting school are retarded.

This makes the perfection of children healthcare system and the realization of the children's right to favorable environment the most critical social problems that need urgent measures on the part of the Government. In compliance with the provisions of Agenda 21, the Government took the following measures to protect children's rights and meet their interests:

- The National Program of Action for the Protection of Children's Rights was approved in 1995. The National Commission on the Protection of Children's Rights was formed in 1996;
- In January 1998, the President of the Republic of Belarus approved the program "Children of Belarus," which provides the dissemination of information on children's rights, harmonizing the national legislation with the provisions of the Convention on

the Children's Rights, and assistance for children in difficult social situations. Five major directions were defined: disabled children, orphans, residents of contaminated areas, social assistance to families and children, and the development of the baby food industry. A special presidential fund was created to support these initiatives.

The Republic of Belarus was the first among the republics of the former USSR to adopt a law on children's rights. The law defines the children's legal status and the principles of the state policy regarding children, as well as the responsibility of state bodies for the protection of children's rights and interests. In 2000, a joint plan of action of the Government of the Republic of Belarus and the UN Children's Fund (UNICEF) was adopted. The plan identifies the mutual obligations of the parties with regard to the realization of children's rights for 2000-2001.

To provide children's access to education, 4771 schools (for 1,547,600 schoolchildren) function in Belarus. Beginning 1999, the number of children attending schools began to decline, after reaching the highest level in 1998 (1,624,900). Over 70 percent of children of preschool age attended pre-school institutions.

4.3.2. Cooperation with non-governmental organizations and trade unions

The Law "On Public Associations" of June 22, 2001 regulates NGO activities. Other legal acts in this area permit unclear interpretations causing the conflicts between NGOs and state bodies. Moreover, a legal mechanism enabling NGOs to exert their influence on state policy-making is not developed.

In fact, the NGOs joined the Sustainable Development decision-making in 1997 during the Parliamentary hearings on nuclear energy in Belarus. As NGOs actively opposed the construction of nuclear power plant in the Republic Belarus, a commission was formed to represent all interested parties, including the Government, NGOs, specialists in power engineering, scientists, and business circles. Eventually, the financing of nuclear power engineering was stopped and progressive laws on the development of alternative power sources were adopted.

In November 2000, at the initiative of the Belarusian division of the International Academy of Ecology and with the support of the Earth Council, Belarusian NGOs created a National NGO Council for sustainable development to reach the consensus on major sustainable development issues and to search for the ways to participate in the work of the National Commission on Sustainable Development.

Belarus has gained certain experience of inter-sector cooperation to address the problems of sustainable development. Some of the projects listed below were cited at the Aarhus Conference in 1998 as "best practices":

- Adaptation of the technology for building energy-saving eco-houses from renewable natural materials; construction of the first eco-house in the CIS using the straw-bale technology (in-construction and in-maintenance energy conservation is 250 and 4-5 times) (1996). In 2000, this project won the second prize of the Energy Globe Award in the category "Building and Housing" (Lintz, Austria);
- Initiating the State Program "Farm Construction from Renewable Natural Materials", a unique state construction program using renewable nature materials (1997-2000);
- The elaboration by "Birdlife Belarus" of complex management plans for protected areas "Sporovskoe", "Dikoe" and "Zvanets" – the first such experience in Belarus The

plans, including both environment protection and rehabilitation measures, were approved by the Ministry of Natural Resources and Environment Protection;

- At the initiative of the scientific production association "Ecoline", elaboration and implementation of the first Belarusian Local regional Agenda 21 for the city of Turov;
- Advancing solar cells from local materials, each costing \$20 and saving 0.5 ton of oil annually (1995-1997);
- Developing the projects of eco-houses that consume no power. The houses are built from renewable natural materials (1997-1999);
- Drafting the alternative non-nuclear energy program for Belarus and publishing its concept in the book "Electricity in Europe. Ten years after Chernobyl", Berlin, 1996, 1997 (2nd edition);
- Assessing the wind potential of the North-West Belarus and launching the first Belarusian wind station in Zanaroch maintained by the NGO "Ekodom" in (1995-2000).

The above projects show that Belarusian NGOs have been actively participating in the process of Belarusian Sustainable Development process and many of their initiatives and efforts contribute to sustainable development and serve to establish partner relations with the state bodies.

Belarus began the elaboration of NSDS-2000 in cooperation with the UNDP. The project "Development and Internalization of the Sustainable Development Strategy within the Context of the Republic of Belarus" was launched. The Project Advisory Council was set up. The Council is comprised of 16 members, including four representatives of NGOs. This is the model example of direct dialogue between the state bodies and NGOs on a permanent basis.

The role of trade unions in sustainable development has been increasing. The Trade Union Federation of Belarus (TUFb) is the largest public association in the Republic of Belarus. It has membership of 4,378,000 people or 54.2 percent of the country's population aged above 14 years. TUFb members account for 91 to 99.5 percent of the employees of state enterprises and organizations. In addition, free and independent trade unions formed the Belarusian Congress of Democratic Trade Unions. They include slightly more than 10,000 people. Accordingly, their influence on lobbying the trade union interests at the state level is minimal.

The legislation grants extensive rights to trade unions. Trade unions can participate in the development and implementation of the social and economic policy of the state and file proposals to state bodies regarding the adoption, changes in or abrogation of legal acts on labor, social and economic issues. The state governing bodies adopt all legal acts related to labor, social and economic rights of citizens with prior written notification of trade unions. Through their authorized representatives they can participate in the work of collegial organs of the state governing bodies, meetings of local executive and administrative bodies, managing bodies of enterprises, institutions and organizations, as well as fulfil other functions regarding the social protection of working people.

4.3.3. Strengthening the role of Business, Scientific and Technological Community in sustainable development

If Belarus is to fully attain the sustainable development objectives, it should tap the potential of the Business, Scientific and Technological community.

The business community of Belarus is poorly organized and is represented by two associations comprising no more than five percent of the private sector entities. Unions of private entrepreneurs are largely sectoral. The business community is unable to effectively influence the social and economic development and consequently plays a minor role in sustainable development decision-making. Moreover, a recently conducted survey indicated that most private enterprises are not aware of sustainable development. Economic recession, lack of capital investment, low utility costs, and negligible fines for violations of environmental legislation and high taxes for the use of natural resources and industrial environment emissions discourage entrepreneurs from investing into environmentally sound technologies.

Several State Research & Development Programs have been implemented in Belarus. They address the sustainable development issues, environmental protection and ecological safety.

In 1997-1998 SR&DP entitled "Management of Natural Resources and Environmental Protection" elaborated the nature management and environmental strategy for Belarus. The second stage of the SR&DP that ran from 1999 to 2000 dealt with its implementation: 261 research projects addressing a wide range of sustainable development issues were carried out. The implementation phase brought together experts from a variety of research institutions, the National Academy of Sciences, private and state enterprises and universities. The second stage research projects were supervised by the Institute for the Management of Natural Resources and Ecology of the National Academy of Sciences and the Belarusian Research Institute for Sanitation and Hygiene of the Ministry of Health of Belarus.

4.3.4. Regional and local sustainable development initiatives

The National Sustainable Development Strategy of the Republic of Belarus should rely on the initiatives of local authorities and local self-governance. However, local authorities do not regard sustainable development as the top priority. Locally, the influence of NGOs has recently increased but their activities funded by foreign donors are limited in scope and tend to be inconsistent. However, there are several success stories that illustrate the potential of the Third sector: the activities undertaken by NGO "Ekolin" in Turov, by NGO Environmental Council in Minsk, by two environmental parties in Gomel. These NGOs conducted environmental assessments and educational projects to raise public awareness of nature protection issues. The activities of Lev Sapega Foundation focusing on the development of local self-governance and the Belarusian Women's Information and Coordination Center, assisting women's NGOs are also noteworthy.

The Local Agendas 21 process should be encouraged in Belarus raise public awareness and commitment, as well as involve local authorities in the process of sustainable development of their regions and the entire country.

4.4. Means of Implementation

The development of effective fund raising and of allocation mechanisms holds a key to sustainable development. In 1996-2001, the state authorities have facilitated the implementation of NSDS objectives, considering the versatility of economic, environmental and social development issues. The measures undertaken brought about a stabilization of the environmental situation in Belarus. Despite the lack of funding, energy-conservation technologies and effective resource management mechanisms have been put in place.

The effective macroeconomic policies of the state propelled sustainable development by (a) allocation of budgetary funds, (b) promotion of research; (c) improvement of technologies currently in use; and (d) roll-out of public environmental awareness and staff training programs.

4.4.1 Macroeconomic policies and the role of the state in supporting sustainable development

The macroeconomic policy of the Government of the Republic of Belarus differs from that pursued in other transition economies by slower pace of privatization, preservation of the rigid state control over the economy and expansionary monetary policy. These measures set the stage for the GDP and industrial output growth, increase in incomes of the population, low unemployment rate and social stability.

The economic growth was boosted by strengthening the role of the state, which was dismantled or weakened at the beginning of the transition process. The Government introduced effective mechanisms that raised the efficiency of resource management that in turn allowed addressing economic, social, and environmental problems more efficiently. As a result, favorable macroeconomic dynamics with a strong emphasis on sustainable development issues has been achieved.

The Government has undertaken comprehensive measures to establish the institutional framework for sustainable development of Belarus. The Law of the Republic of Belarus "On State Forecasting and Programs of Social and Economic Development," which was adopted in 1998, mandated that the National Strategy for Sustainable Development should be developed for 15-year period and should be a framework document for the elaboration of all forecasts and programs for social and economic development of regions and branches of economy. Both the Law, and the Basic State Forecasting Provisions of the Republic of Belarus set forth detailed procedures for the elaboration and implementation of NSDS. The adoption of these documents emphasized the role of sustainable development in the macroeconomic policy of the state.

Belarus had to combat the following serious negative economic trends from 1996 to 2000:

- High inflation rate, particularly from 1998 to 2000 (from 6 to 11 percent monthly);
- Unfavorable financial conditions of enterprises (by the end of 2000, 23.4 percent of enterprises were unprofitable and outstanding debt equaled 10 percent of their revenue);
- The lack of investment (investment accounted for less than 20 percent of the GDP in 1996-2000, while in developed countries, investment ranges from 25 to 30 percent of the GDP).

In the last two years, the macroeconomic policies have seen some positive changes. Since the year 2000, restrictive monetary policy has been attempted to implement. Although monetary supply indicators have remained above targeted volumes, the inflation rate dropped from 108 percent in 2000 to 41.6 percent in 2001.

The comprehensive financial stabilization measures have allowed the population's propensity to save to grow raise hard currency revenues of Belarusian enterprises to increase and population incomes to raise, and more transparent legislative framework for business to maintain

In order to implement the provisions of the NSDS and form a socially oriented market economy, the Government has chosen gradualism as a transition strategy, combining different forms and methods of administrative control and indirect regulation.

Despite some positive changes in the macroeconomic policy experienced over the last two years and measures taken to raise the efficiency of state management, certain negative trends threatening sustainable development still persist. Those include declining profitability in the private sector, increased number of unprofitable enterprises, decreased investment and increased budget strain.

Therefore, the Government needs to (a) liberalize its macroeconomic policies, (b) reduce administrative controls, (c) employ free market mechanisms, (d) implement economic liberalization, (e) form the institutional environment, (f) promote entrepreneurship, and (g) create a favorable investment climate.

4.4.2. Financial resources and mechanisms

Sustainable development is promoted through direct allocation of budgetary funds and subsidies as well as application of indirect, mainly tax-related incentives.

Tax relieves have been put in place in Belarus to foster sustainable development. Overall, statutory privileges to promote sustainable development can be broken down as follows: (a) Chernobyl and environment-related; (b) measures to promote investment, R&D, small business, and (c) social transfers.

The majority of funds for sustainable development is allocated from the state budget. In 1996-2001, from 6 to 7 percent of the GDP (or 16 to 18 percent of the budget expenditures) were set aside for education, five percent for healthcare and from 13 to 15 percent for sport and healthy lifestyle promotion. An additional 0.5 percent of the GDP (or 1.2 percent of the budget expenditures) were spent on science. The budgetary funding for R&D, however, has recently been cut. Environmental protection expenses including the Nature Protection Fund expenditures accounted for 0.6 percent of the GDP. The budgetary funding of Chernobyl-related activities was also reduced from 25 percent in 1990 to 11.5 in 1995 and 5.4 percent in 2001. It should be noted that a mechanism for efficient and transparent distribution of budgetary funds should be developed and competitive methods such as tenders and auctions should be used more extensively.

Taxes as well as natural resources use fees and the fines for the violations of environmental legislation are channeled into environmental protection funds directed to promotion of energy conservation.

The Nature Protection Fund and the National Energy Conservation Fund have been established. In addition, since 1998, economic entities have been allowed to include the cost of saved fuel, energy, and raw materials in the tax-deductible unit cost. The funds saved can be used to finance R&D, energy and resource conservation projects and up to 50 percent can be allocated for paying bonuses.

A considerable reduction in investment is the most challenging problem holding back sustainable development the sustainable development process in Belarus. Capital investment in 2000 accounted for 52 percent of the 1990 volume. Investments equated 46,5 percent of the level reached in 1990. High-tech and export-oriented industries suffered the sharpest decline:

investment in machine building saw a two-fold decline, electronics a 11 fold fall, and R&D – eight fold drop. As a result, the nation-wide average depreciation of fixed assets in 2000 reached 71 percent. The industrial assets recorded an even larger degree of exhaustion (77 percent).

The same negative trends affected investment in the environmental protection. The amount of funding allocated by the state budget and individual enterprises keeps decreasing, while financing provided by non-budgetary funds is on the rise. Foreign investment, however, is also declining.

The Government succeeded in raising certain funds (approximately two billion USD) through Government-guaranteed credit lines. However, the amount of foreign credits has been steadily diminishing since 1996. In September 2001, the Republic of Belarus signed a \$40 million loan contract with the World Bank on the Social Infrastructure Retrofitting Project. Of these, the World Bank loan accounted for 22.6 million USD. As a preliminary payment, the World Bank has allocated \$1,000,000 that used for energy conservation projects covering 40 objects of the social sector.

Humanitarian aid to counter the effects of the Chernobyl disaster is another source of funding for sustainable development. However, the volume of this aid has been falling and dropped from \$60 million in 1996 to \$44 million in 1999, while slightly rebounding to \$49 million in 2000.

Sustainable development in Belarus is hindered primarily by a lack of funds and the absence of efficient mechanisms of their allocation.

4.4.3. Science for sustainable development

Support and development of scientific and technical potential is an important prerequisite for the country's sustainable development. Transition period problems caused a decrease in the research spending which tumbled from 2,1 percent of the GDP in 1990 to 0.8-0.9 percent in 1996-2000. The number of researchers decreased three fold.

However, the governmental support for fundamental research has grown to certain extent. Particularly, the share of budgetary financing in the total research expenditures increased from 36.4 percent in 1996 to 46.2 percent in 2000. As a result, the share of financing of the fundamental research was 18.9 percent in 2000 as compared to 11.9 in 1996. The bulk of fundamental research is conducted by the National Academy of Sciences of Belarus (55.2 percent of the total expenditures on fundamental research in the country), the Ministry of Education (20.3 percent), the Belarusian State University (12.4 percent), the Ministry of Health (4.9 percent), and the Ministry of Agriculture and Foodstuffs (2.2 percent). Traditionally, the research in technical sciences is treated as priority. Since 1996, most fundamental research has been carried out under the aegis of State Programs for Fundamental Research (SPFR). From 1996 to 2000, a total of 1284 research projects were implemented within the framework of 39 SPRF. In addition, the development of fundamental research is funded through grants of the Belarusian National Fund of Fundamental Research. Technological innovations are mostly financed from non-budgetary sources.

One of the prerequisites for sustainable development is the introduction of ecologically safe energy and resource conservation technologies ensuring effective environment protection. However, the amount of research in the field of environmentally sound and energy

conservation technologies is clearly insufficient in Belarus. Suffice it to say that of 1070 projects on new technologies, equipment, and materials implemented in 1999-2000, only 37 projects (3.5 percent of their total number) were related to environmental protection.

4.4.4. Programs and mechanisms for the modernization of production and technological capacity building

To foster the introduction of new technologies and promote up-to-date manufacturing practices, the following measures have been taken in Belarus:

- Applied research & development;
- Introduction of new products ;
- Development of new technologies;
- International transfer of technology (including the state-of-the-art technology and related know-how);
- The increase in hi-tech exports and imports.

Most applied research projects are conducted under state-financed target programs. In recent years, the Government focused on the support of R&D projects that were close to completion to speed up their commercialization. In 2000, 1,325 nation-wide, 50 sectoral and 74 regional R&D programs and 117 innovation projects were implemented in the Republic of Belarus. These initiatives generated 125 patents and 175 patent applications. From 37 to 39 percent of innovations have entered production and another 40% are presently at the pre-production stage.

An innovation survey of 176 industrial companies conducted in 2000 revealed that the bulk of R&D projects (74 percent) were carried out in cooperation with Belarusian companies only, followed by Russian enterprises with 16.6 percent. A mere nine projects were implemented in cooperation with entities located in the CIS, six with European companies, and one with a firm from the South-East Asia.

The modernization of production has been proceeding at a slow pace largely due to the lack of funds. The share of innovative products equaled 3.8 percent of the total industrial output in 1996, 3.3 percent in 1997, 3.9 percent in 1998, 3.7 percent in 1999, and 2.6 percent in 2000.

About 40 percent of the technologies used in the country (35 percent in industry) date back to the last decade. However, 48 percent of technologies (53 percent in industry) were introduced before 1985. The share of traditional technologies is 79 percent in the economy as a whole and 87 percent in the industry. The technologies used were developed in the USSR (50 percent) and in Belarus (38 percent). The share of imported technologies is insignificant (12.5 in the economy as a whole and 9 percent in industry).

4.4.5 Education, public awareness and training

The NSDS tasks related to the ecological education were reflected in the National Concept of Environmental Education and in the National Program for Advancement of Environmental Education adopted jointly by the Ministry of Natural Resources and Environmental Protection and the Ministry of Education of the Republic of Belarus in 1998.

The system of ecological education should cover all educational institutions: infant, primary and secondary schools, specialized secondary, higher educational and post-graduate

institutions. However, the implementation of both programs faces difficulties due to lack of financing and planning and vague distribution of responsibilities.

A network of regional centers for ecological education of schoolchildren (young nature enthusiasts clubs) was created. More than 350 secondary schools and colleges have ecological courses and programs in their curriculums. ***The most popular forms of ecological education are ecological schools, classes, courses and nature enthusiast associations.***

At the initiative of the National Institute for Professional Education, such courses as "Fundamentals of Ecology and Energy Conservation" were introduced. At the Belarusian State University ecologists are trained at the faculties of biology, chemistry, and geography. The Belarusian State Technological University (the BSTU) trains engineers/chemists in specialization "Environmental Protection and Efficient Management of Natural Resources". The Belarusian National Technological University (the BNTU) has an ecological department that trains engineers in ecological management in specialization "Ecological Management and Audit in Industry". Students of the BNTU, the BSTU and the Belarusian Agricultural Academy attend special courses on sustainable development. The international university program "Baltic University" coordinated by the Uppsalla University (Sweden) has been providing considerable assistance in the organization of training courses on sustainable development. Twenty-six universities, more than 100 lecturers and 2000 students participate in this program in Belarus.

Numerous ecological NGOs focus on ecological education. For instance, the youth association "Ecological Initiative "Belaya Rus" published manuals "Effective Strategy for Ecological Education" and "Above Water, Under Water" which are available for school teachers and specialists in ecological education. The "Ekodom" NGO holds seminars for schoolteachers.

The Belarusian Scientific Research Center "Ecology" and the Institute for the Improvement of Professional Skills "Industry Personnel" of the Ministry of Industry conduct professional training for specialists in ecology at industrial enterprises.

After the Republic of Belarus signed, ratified and made effective the Aarhus convention "On Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters", the public became better informed about the ecological situation in the country and problems of sustainable development Sustainable Development. At the initiative of the Ministry of Natural Resources and Environmental Protection, a public council was formed to coordinate the activities of the Ministry and non-governmental ecological organizations. As a result, changes and additions to the current law have been prepared.

Public ecological organizations of Belarus make considerable contribution to the distribution of ecological information. Since 1996, the youth organization the youth association "Ecological Initiative "Belaya Rus" has been publishing a monthly bulletin "Green News" which is distributed in schools, higher educational institutions and NGOs.

The Ministry of Natural Resources and Environmental Protection, in cooperation with the scientific research center "Ecology", the Institute for the Management of Natural Resources and Ecology, and the Central Scientific and Research Institute of the Complex Utilization of Water Resources, issues scientific periodicals "Nature Resources" and "Water Resources", legal normative documents on environment protection, analytical reviews, and other scientific and technical information.

To raise ecological awareness, it is important to create the relevant infrastructure, and develop and update information and telecommunication technologies.

5. Future Objectives

In compliance with the Law of the Republic of Belarus "On State Forecasting and Programs of Social and Economic Development", the NSDS currently being developed for the period up to the year 2020 succeeds to the previous strategy up to the year 2010. It will not only develop the major trends of NSDS-1997 but also include the provisions of the Rio Summit and other international forums, the UN Millennium Declaration, as well as the documents to be adopted at the World Summit on Sustainable Development, including the basic provisions of the UN Secretary General's report. A draft of this report was prepared by the UN Commission on Sustainable Development acting as the preparatory committee for the World Summit on Sustainable Development.

Sustainable development process in Belarus is complicated by the need to address the problems related to the Chernobyl disaster. As a result of the disaster, 23 percent of the Belarusian territory inhabited by one third of the country's population was contaminated. The aftereffects of the Chernobyl are so devastating that Belarus is unable to solve all the problems alone. With this in mind, the assistance of the international community is of primary importance. However, the Chernobyl issues seem to be taking a back seat for the international community. One of the main causes for this is that the support of the states affected by Chernobyl disaster are mainly channeled in the form of humanitarian aid.

In recent years, the international community, including the United Nations, came to a conclusion that the cooperation in mitigating the Chernobyl aftereffects should be restructured. In 2001, a new concept for the UN activities regarding Chernobyl was adopted. In particular, the international assistance should be aimed at the rehabilitation and support for the areas affected. A new UN Chernobyl strategy is of great importance to Belarus. Therefore, it is necessary that this issue be given a new impetus at the World Summit on Sustainable Development in Johannesburg.

The Chernobyl catastrophe is the greatest but not the first ecological disaster and probably, however sad it might seem, not the last one. Therefore, one of the most important sustainable problems is the prevention of such disasters and, if happened, mitigation of their aftereffects. To this end, the Republic of Belarus believes that mechanisms for international cooperation should be developed in the area of dealing with ecological disasters caused by technological factors, including international monitoring of such areas and their rehabilitation.

Belarus believes that to address the basic sustainable development problems of, international scientific cooperation should be expanded on all aspects of Agenda 21. A system of sustainable development indicators should be created at national, regional, and global levels. The efforts and financial resources of governments, international organizations, and other interested parties in attaining the sustainable development objectives should be consolidated.

The NSDS-2020 should be developed to reflect the present-day tendencies, primarily, globalization, modern communications, institutional transformation, and international competition. These processes will have a considerable influence on the social and economic development of the country. On one hand, Belarus has to adhere to the principles of sustainable development stipulated by Agenda 21 and National Sustainable Development

Strategy. On the other hand, it has to flexibly adjust its economic, social and environmental policies to topical world tendencies. The principal priority here should be the sustainable human development, public health, quality of life, culture and education.

The most important future objectives of long-term sustainable development for Belarus are:

- Adjustment to globalization;
- Economic reforms and provision of conditions for sustainable development;
- Transition to a socially-oriented economy, based on sustainable development principles and restriction of environmentally unsound technologies;
- Introduction of energy conservation technologies and promotion of alternative energy;
- Development of environmentally safe production patterns, the use of resource conservation and environmentally sound technologies; development of the framework for ecological services;
- Poverty eradication;
- Capacity building for comprehensive human development including the support of healthcare, education, science and culture;
- Improvement of the demographic dynamics and sustainable development of human settlements and territories;
- Protection of environment;
- Mitigation of the aftereffects of the Chernobyl disaster;
- Strengthening sustainable development decision-making;
- International cooperation and social partnership for conservation, protection and rehabilitation of ecological systems;
- Raising public awareness on sustainable development issues, creation of educational framework based on sustainable development principles and values;
- Development and promotion of Local Agendas 21.

The National Sustainable Development Strategy-2020 will focus on harmonization of environmental, economic and social priorities of development. The role of the state as a safeguard of ecological security and human living conditions should be further increased.